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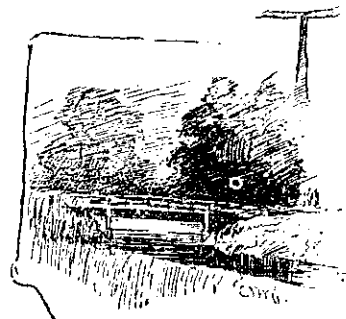
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THE all-absorbing topic, at present, in the local affairs of this city is the horse-railway problem. The daily papers contain many accounts of the wrongs and nuisances committed by these corporations. Our own little grievance, at the Institute, is the failure to always induce a car to stop when signaled. The drivers, acting, we suppose, upon the supposition that everybody here is a young athlete, and perfectly able to jump on the car in motion, drive by our buildings at full speed. The trouble comes when, on a rainy night, with a drawing-board under one arm and a bag and umbrella under the other, a man is expected to catch a car on the fly. We happened to notice, one evening some months ago, a couple of fellows descend the steps of Rogers and invite, in perfectly distinct manner, a passing car to stop. The conductor declined the invitation, and stood in the doorway of the car with a very expressive grin on his face, evidently enjoying the race, for the two gave chase. The latter won, but not until

the car had reached Arlington Street. This conductor was probably a trusted and honored servant of the road by which he was employed, for he was seen on the street, a few weeks after, promoted to the dignity of car-starter.

IT has become a fashion at the Institute, to think that athletic sports are matters with which a truly scientific mind cannot afford to be bothered. This is certainly a mistaken idea, for in few institutions is a good physical development as necessary for a successful future, as it is in ours. More or less exposure to severe weather and trying circumstances, is an almost certain attendant on a successful career in most of the professions which an Institute man is supposed to follow. Who, for example, is in more need of a good constitution, capable of withstanding the attacks of disease, than a chemist, who spends a great part of his time in an atmosphere vitiated by unhealthy compounds and bad gases; or a civil engineer, who may be called upon to spend weeks in camp, perhaps in swampy lowlands, exposed to attacks of malaria.

A sound constitution is not a difficult thing to attain. The reason the mass of our students do not take exercise, is because of disinclination, or, to put it plainly, physical laziness. Instead of honestly acknowledging the fact, they say: "Our gymnasium isn't good for anything; it has no apparatus." Now, the truth is, the Institute gymnasium has nearly all the really essential apparatus of a good gymnasium. Many gymnasiums which have cost twice the money have not as good appliances for general exercise. It could hardly be expected that money should be spent on apparatus which is of use to only a twentieth part of all the students at the Institute. If each man would put in four hours a week,—or two would do if the exercise were diligently and understandingly applied,—would

not the result be most gratifying to the man himself, to his instructors because of his clearer brain, and to the nation because of the far reaching inheritance of health which is thus begun?

WHEN we first decided, for the benefit of the students, to put our exchanges in the reading-room, we did so with the idea that they might afterward be collected and placed on file. This idea we have since found to be wholly visionary and fallacious, as events have proved. *Life* and *Puck* have usually, from some unknown cause, disappeared quite promptly from the tables soon after their appearance thereon, together with many of our best college exchanges. We like to have them read, — O yes, — but we only protest at the *extent* to which they are read, or, more correctly speaking, totally devoured. If our friends will only stop short at imbibing the contents of a paper, and then lay it down carefully on the table, in order that some one else may enjoy the same privilege, instead of proceeding thereafter to tear it in pieces, or use it as a weapon of warfare, or throw it playfully at a companion across the room, or any of those little things that tend to shorten its period of usefulness, it would be quite as agreeable all round.

Once or twice we have mildly remonstrated at the abuse to which our exchanges are subjected, and to show the extent of this abuse, we would state that out of about twenty which were placed on the tables not long since, only *two* were left to be collected before distributing a fresh supply, and these were so badly defaced as hardly to be recognized. Scarcely enough fragments are usually gathered up to keep from starvation that fabulous but omnivorous animal, the office goat, to which some of our humorous contemporaries frequently allude.

It is indeed gratifying to have our little favors appreciated, but we trust we are not indelicate in expressing, if we might be so bold, the wish that those who use the reading-room will hereafter exercise a little more moderation in their manner of reading THE TECH's papers, avoiding, if possible, tearing off the covers, making copi-

ous pencil-notes upon the margins, or even carrying them off by mistake. By regarding this little piece of advice, we are very sure they will be quite as likely to enjoy a continuance of our kindness — in this respect perhaps more so.

THE great trials and the great opportunities of life come at most unexpected times; and he who keeps in the most constant training, is the one who holds the best chance of success. The athlete knows the hour and the manner of the trial for which he is preparing; but in the race of life, the man is often unaware of the stride he is taking. All he can do is to see that his condition shall be such that disadvantages shall not weigh him down, and that opportunities shall not pass without his being ready and able to grasp them. And this condition is brought about by the careful discharge of the duties, and the comprehensive hold of the occurrences, of each successive day, as the athlete's body is trained by long-continued work with light weights and the daily plodding around the track.

FOR a number of years it has been the custom at the Institute to leave the choice of captain of the foot-ball eleven to the team. By this course there exists a period, lasting from the date of our return in September to the time when the team is chosen, during which our foot-ball men practice without a nominal head. Each one goes about his practice in any manner he sees fit; some do not even practice at all, very few train; and all this comes from the fact that there is no one who has the power to make them do the right thing. On account of this, we suggest to the Foot-Ball Association that they choose the captain of next fall before this term closes, so that as soon as the men return they can go into training under a recognized head.

ALL subscriptions to THE TECH are now due, and we request subscribers who have not yet paid, to do so at once. All money should be delivered to the Treasurer, either personally or through the letter-rack, and receipts will be immediately sent.

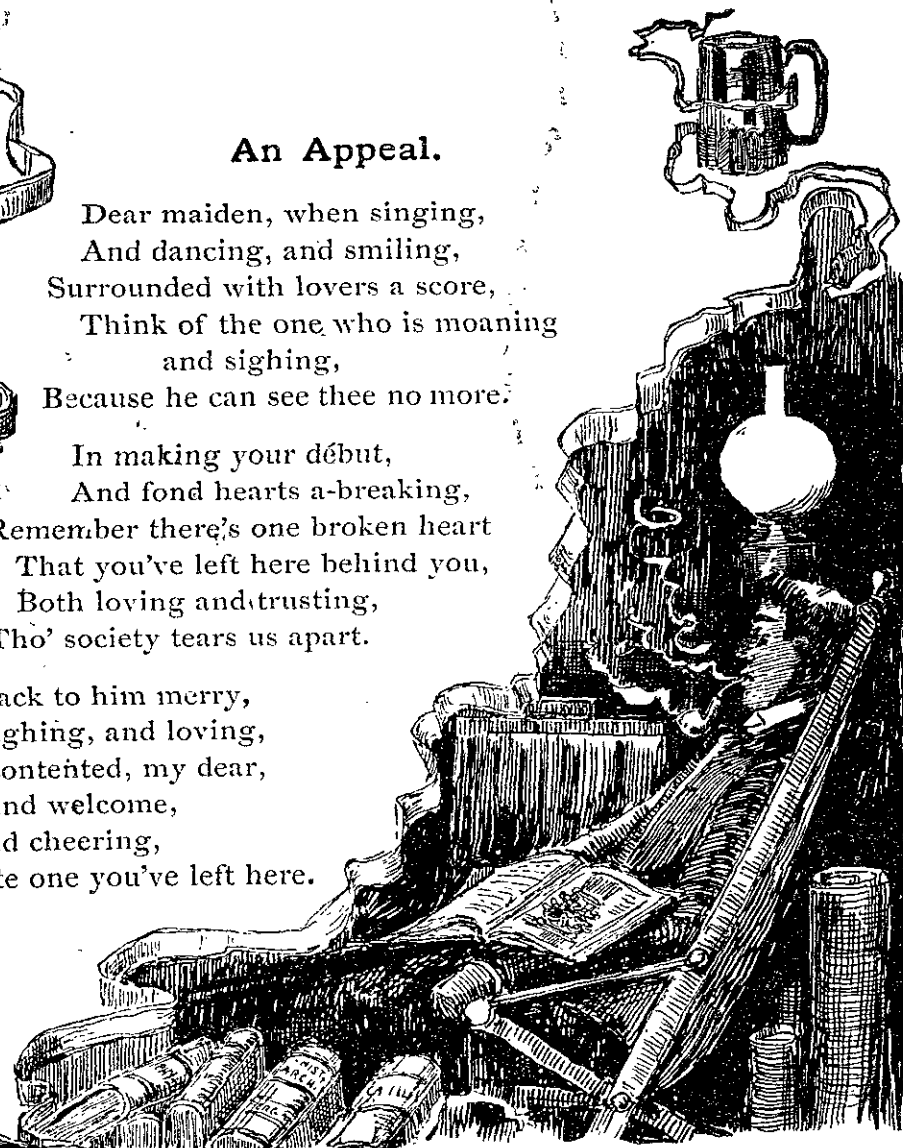


An Appeal.

Dear maiden, when singing,
And dancing, and smiling,
Surrounded with lovers a score,
Think of the one who is moaning
and sighing,
Because he can see thee no more.

In making your début,
And fond hearts a-breaking,
Remember there's one broken heart
That you've left here behind you,
Both loving and trusting,
Tho' society tears us apart.

Come back to him merry,
And laughing, and loving,
Unchanged and contented, my dear,
And you will find welcome,
Both hearty and cheering,
From the desolate one you've left here.



Quarantined.

ABOUT the middle of June, 1884, a party of three took passage on the Pacific Coast Steamship Company's steamer Mexico, which left San Francisco about that time, proceeding on her regular voyage to Puget Sound. After a pleasant voyage of three days' duration she drew up in front of Victoria, and was turning around, preparatory to hauling up to the wharf, when a small boat put out toward her. It contained the health officer and two quarantine officers, who came aboard and engaged in private conversation with the captain. Presently they descended to the steerage, reappearing in the course of half an hour, when the health officer returned to Victoria, leaving the two other officers on board the steamer. The steamer up to this time had been moving about; but now she stopped her engines, to the amazement of

the passengers, who were utterly at a loss to account for these unusual proceedings.

At noon, when all the passengers had assembled for lunch, the captain explained to them the reason of the delay. It seemed that a hundred and fifty Chinese had been taken on board from a steamer direct from China, they not being allowed to land in San Francisco. As the Mongolians filed from one boat to the other they were hastily examined, to see that there was no sickness among them. There were about twice as many more left in the steamer from China, who were to go up in the next sound steamer; but in order not to delay the former a barge was chartered, and they were placed on it to wait a week or so. The day after the Mexico left, these Chinese were transferred to the barge, and in examining them a case was found of what was supposed to be small-pox, and the vice-

consul at San Francisco having been informed, he immediately telegraphed to the authorities in Victoria to delay the steamer until further developments. The passengers waited anxiously for further word, expecting confidently to be released next day; but the next dispatch brought word that the case was, without a doubt, small-pox. The health officer telegraphed to the Government at Ottawa concerning the case, and a reply came advising him to quarantine the vessel. When he came on board and pronounced a quarantine of twenty-one days from the time of leaving San Francisco, a few of the passengers broke out crying, some swore at the doctor and the Chinamen, while others went so far as to say that if a Chinaman did break out with small-pox they would throw him overboard. The vessel drew up her anchor, after a short time, and proceeded to the quarantine grounds, which lay about two miles from Victoria and half a mile from Esquimault. It was now only four days since we left San Francisco, and we looked forward with dread to the remaining seventeen days that we were to be held prisoners. Our position however was not so unbearable as might be imagined, for there was always something to take up our attention. A theater troupe with a brass band helped materially to pass the time, and card-playing whiled away many an hour. There was a concert every evening in the saloon, which hastened the march of time, and novels were in great demand. The chief trouble was that the passengers couldn't communicate with friends by letter, and seldom by telegraph, for the telegraph-operator wouldn't send messages C. O. D., and no money could be accepted from off the boat. Those telegrams that were sent had to be dictated to people in small boats, and everything that the passengers procured from Victoria was taken on credit. A few days after the Mexico had taken her position in quarantine, a British man-of-war, stationed at Esquimault, sailed out into the sound, and began a torpedo practice. The torpedoes were blank ones, and were shot along the top of the water, a steam launch belonging to the Britisher giv-

ing chase, and bringing them back to the latter. It was quite interesting watching the monster dashing around at a great rate of speed, frequently quite near us, and at times nearly out of sight. Another source of interest was the wonderful mirage which was visible a large part of the time. Several very tall and jagged islands, about five miles from us, often appeared like level plains, while the phenomenon had the effect of raising islands into view that were usually out of sight. About a week after we went into quarantine, a number of passengers made an effort to steal ashore. It was planned to seize one of the ship's boats at midnight on a certain date, and row to shore, leaving the small boat on the beach. The plot, however, was in some way discovered, and when the party went to put the plan into execution, two or three sailors rose up in each of the boats, and the baffled passengers were compelled to return to their staterooms. A few days after this occurrence, the health officer came out and examined the Chinese carefully, to see if any disease had broken out among them, and finding none, he reduced the time of quarantine from twenty-one to sixteen days, to our infinite delight. The fruit that was on board had now begun to spoil, and one of the Victoria dealers sent word to the vessel to sell his lot to the passengers for what it would bring. They quickly took advantage of this offer, and for a time lived largely on fruit. The limit of quarantine expired on the second of July, and no sickness having appeared, the vessel drew up to the wharf at Victoria, at seven o'clock that morning, and we experienced the gratification of being once more on dry land. For about half an hour we watched the Chinese landing, and it was a sight worth seeing. The higher class were arrayed in skin-tight silk pantaloons of various colors, and indigo-colored coats of finest texture. A black skull-cap with a red knob signified their rank, and the whole gave to the Mongolians the appearance of veritable dudes. There were several women among them, and they were attired in gorgeous vestments. Their faces were painted very artistic-

ally, the color fading gradually from a deep pink at the center of the cheek, till it became scarcely distinguishable. Their hair was arranged to represent wings of butterflies, an oil being used to produce the requisite stiffness, while brooches of unique design held the folds in position. When our curiosity had been satisfied, we and three friends of ours hired a carriage and drove for a few hours around among the interesting localities, among other things seeing divers laying cable preparatory to raising a sunken steamer. We visited the shops in Victoria where Indian curios were kept, and saw many curious articles, useful, ornamental, and otherwise. The Hyders, who live on San Jaun Island, are very skillful workers in gold and silver, more so than any other tribes on the sound. They excel in design, showing great originality in this direction, and their carvings represent figures of which a white man would never dream. They can take a double eagle and pound it out into a thin saucer, preserving the faces just as they were on the original coin. Another tribe, living farther north, are superior workers in slate, of which a black variety occurs in their territory. They take particular pleasure in producing figures of monsters, who play a part in their mythology, and they also work up the slate into bowls of odd design. In one of the shops we saw a quantity of a fish known as the oolachan, or candle-fish. They are brought down from Hudson's Bay in large quantities by the Indians, who use them, when dried, as candles; they burn for some time, with a smoky flame a little larger than that of a candle. When pressed, these fish, which are from six to eight inches long, yield a fat of the consistency of syrup, and which the Indians use as we do butter; they seem to relish it greatly, but it is rather too oily and strong for the unaccustomed palate. We returned to the steamer a little before two o'clock, and before long were speeding along toward Port Townsend, which we reached some time before dark, having had Mt. Hood and Mt. Baker in view a good part of the time. The passengers were not allowed to land, however, till a pompous young disciple of

Æsculapius came aboard to see if the vessel had been fumigated; and he having been satisfied, we went ashore and enjoyed ourselves while the steamer remained. The business portion of Port Townsend is built over the water, while the residences are built on a high bluff, sloping abruptly to the water, and command an excellent view of the neighboring portion of the sound. At nine o'clock that evening the steamer left Port Townsend, and next morning when we awoke she was lying moored to the wharf at Seattle. After a hasty breakfast we stepped ashore, and bade a lasting adieu to the scenes of our imprisonment.

H. G. G.

"By Art's Sly Hand."

(RONDEAU.)

A country lane with wild flowers fair,
A lowly cot half sheltered there,
And on a bank close by there lies
A maiden coy, with laughing eyes,
And rosy cheeks, and sunny hair.

A palace hall where nobles meet,
A queen with princes at her feet,
Her beauty placed, I should surmise,
By art's sly hand.

I long for power Fate to defeat.
Ha! my Garudâ stone will cheat!
Presto! the maid's in queenly guise;
The queen to country lane fast hies,
But still tries beauty to entreat

By art's sly hand.

J. E. S.

A Tale of Ye Olden Times.

IN the war of 1762, between France and Spain on the one hand, and England on the other, many of the islands in the West Indies fell into the hands of the English. One of the last to yield was Martinico, the principal mart of trade in the center of the French possessions in the Caribbees. Its capital surrendered without a blow, after the fall of Fort Royal before the combined attack of General Monckton and Admiral Rodney; for the wealthy planters, fearing that a long contest would ruin their estates, signified their willingness to capitulate. Havana, pressed by the English and the forces from the northern colonies, which arrived at the scene of

action none too soon, followed suit, and then came the treaty that restored to France some of her most valued islands—Martinico, Guadeloupe, and others. Among the islands given up by the English was the barren little islet of Desirade, laid down on modern maps as Des-eada, four miles from Guadeloupe—a mere speck in the chain that make up the Lesser Antilles. It is but four miles in length by two in breadth, a rocky, unfertile spot, where the few inhabitants of to-day depend chiefly on fishing for a living.

On this unattractive spot, more than a century ago, the French Government tried to establish a reformatory school for the dissipated sons of wealthy and noble parents; young men who idled about the capital, where the love of gambling and other forms of dissipation were fostered and encouraged by the examples of their elders.

In July, 1763, it was formally announced in Paris, that when young men were known to have disturbed the peace of their families, and had committed offenses not punishable by law, parents applying to the secretaries in the departments of war and marine, could have them transported to Desirade, satisfactory evidence being given that they ought to be so dealt with. The captains of the ships in which they were sent out were to be answerable for them, till they were handed over to the Governor-General, at Martinico, who, in turn, was to see them forwarded to their point of destination. On board ship they were to mess with the sailors, and on land they had the fare of the common soldiers. At Desirade they were to be lodged in cabins built for them. The use of firearms was forbidden, and every precaution was taken to prevent their escape. Their clothing was furnished by the Government, and to encourage them to till the soil, for which implements were provided, they were given the products of their labor. As soon as they showed signs of amendment they were divided into classes, and through the department at home their friends were advised of their condition and improvement. Added to this there

was a wholesome clause, that if, notwithstanding the visible improvement of a young man sent to the island, his parents or guardian wished to keep him there, that they might enjoy his estate, he would be assisted to recover his property, if he chose to remain in the colony, or he would be allowed to return to France to look after his affairs in person.

M. Nadan Detreuil was placed in charge of the school. He was Governor of Guadeloupe at the time that the island fell into the hands of the English. The French, smarting under repeated and severe losses, visited their misfortune on the heads of those who were in charge of their different possessions. Detreuil was tried by court-martial, displaced, and otherwise punished for that which he could not prevent. When the first smart of defeat was over, the injustice of the act was seen, and in May, 1765, the king signed a brevet with his own hand, discharging all Detreuil's penalties and reinstating him "in his honor, reputation and prerogatives." And as he had possessions in Guadeloupe, and preferred to reside there, he returned to the island with his family, comprising his wife and one daughter, Amélie. His wife was a beautiful Spanish woman, and his daughter, even more beautiful, had all her grace and accomplishments. She was scarcely sixteen, the idol of her parents, and her hand was sought by every wealthy young planter on the island; but on none had she smiled. Her father was pleased to have charge of the school; his military training had fitted him for the post; and as those under him had had a military training in France, he kept up a like discipline, that they might not forget what they had already learned. And the better to enforce this discipline, and to look more closely after the school, he had quarters at Desirade, which he occupied at times. Here he treated the young men under him with consideration; he encouraged them to walk in the path that had been laid out for them, and did all that a kind-hearted gentleman could do for their improvement and entertainment.

One of the pupils was named De Rochfort. He had been sent to the island for no particu-

lar fault, but rather to get him out of the way, his relatives having some reason for so doing; a treatment that burned out that love of home and kindred which has a place in every human breast. He had made as much progress in his studies as was usual with the young men of that day, and had shown an aptitude for the life of a soldier. Well made, with a mind fairly stored with information, and pleasing in his address, it is easy to see that such an one would make a favorable impression on the commandant, who invited him, as he did others, to his quarters. There he fell in love with Amélie, who returned his passion. But what could they do? They could neither of them speak of the feelings that animated their breasts, and even a suspicion of their attachment would have separated them so widely as to banish all hope of seeing each other again. It was love of the eyes,—an occasional touch of the hands, rather than of words,—and were it not that her duenna, who saw through it all, and who had known how sweet it was to love and be loved, they could never have exchanged words. Had there been a hope that in time the obstacles to their union would be removed, they might, perhaps, have bided their time, but there was no such hope; and when he urged her in whispers to flee with him, her hot Andalusian blood yielded to his persuasion. But if she went with him, to his honor and love she had to trust, for no priest at Gaudeloupe would dare to marry them; and not until they were beyond the jurisdiction of the French was there the least chance of their being united. Without weighing it all, and guided only by love, she promised to go with him.

When the hour came they stole away, and by a lonely, precipitous path, followed only by fishermen, they descended slowly to the beach below, taking with them a small portmanteau—all they dared to carry. There they bribed a fisherman to take them to the harbor of Gaudeloupe, four miles away, which they reached in time for him to return before the dawn of day. Chance took them to a small vessel in the offing, bound for Virginia, and ready to sail. The captain, a kind, fatherly man, counseled

them to return, but it was too late for that; and seeing this, he gave up his cabin to the girl, spurned the gold offered him by her boy-lover for their passage, took him with him to sleep in the forecabin, and inwardly resolved not to lose sight of them till they were man and wife. In a few hours they had left the land behind them, and all seemed well; but in a day or two the yellow fever broke out on board, and one of the first victims was Amélie, who, in the close and confined cabin, with a tropical sun beating down upon the deck over her head, soon became delirious, and in that state passed away. Her nervous system had been strained to the utmost by what she had gone through with and had undertaken, and she never rallied. To De Rochfort, who gave way to the most poignant regret at what he had done, the blow was crushing. Landing at Williamsburg, he was without friends and with but little money. Unskilled in the ways of the world, until now never called upon to exert himself for his own support, he felt for a time that death would be preferable to such an existence. But, rallying, he entered upon a course of instruction to young men in the colonies in the art of fencing, of which he was a master, which gave him barely enough to meet his daily wants. Then came the Revolution; and again his military training stood him in hand. Into the struggle he threw himself; and here we lose sight of him.

New Methods of Squaring Numbers.

THE work of many arithmetical computations may be much diminished by the use of short methods of multiplication and division. Their use trains the student to perform many problems mentally which would otherwise entail a mass of figures.

Thus a short method to multiply a number by 99 is to multiply by 100,—that is, annex two ciphers,—and from this result subtract the number.

To divide a number by 25, move the decimal point two places to the left and multiply by 4.

The following original rules for squaring

numbers, though seemingly complex, are, when mastered, extremely simple, and will often be found to be much quicker than the ordinary multiplication, with less liability to error.

In the first of these methods the number to be squared is considered to be the sum of an odd multiple of 25 and a number equal to or less than 50.

Rule: To the product of the two multiples of 50 next higher and lower than the multiple of 25, add 100 times the product of the number into the quotient of the higher multiple of 50 divided by 50. Then add the square of the difference between 25 and the number.

Examples.

$$\begin{aligned} 298 &= 275 + 23 \\ 300 \times 250 &= 75000 \\ \frac{300}{50} \times 100 \times 23 &= 13800 \\ 2 \times 2 &= 4 \\ (298)^2 &= 88804 \\ 412 &= 375 + 37 \\ 400 \times 350 &= 140000 \\ \frac{400}{50} \times 100 \times 37 &= 29600 \\ (37 - 25)^2 &= 144 \\ (412)^2 &= 169744 \end{aligned}$$

When the number lies between 25 and 75 the process reduces to this:—

To the square of the difference between the number and 50 add as many hundreds as the number differs from 25.

Required the square of 67.

$$\begin{aligned} (67 - 50)^2 &= 289 \\ (67 - 25) \times 100 &= 4200 \\ (67)^2 &= 4489 \end{aligned}$$

An algebraic statement of this rule is as follows:—

$$(25y + x)^2 = 25(y + 1) \cdot 25(y - 1) + \frac{25(y + 1)}{50} \cdot 100x + (25 - x)^2$$

where y is an odd number and x is less than 50.

An incidental rule in connection with this method is this:—

The square of any odd multiple of 25 is equal to the product of the next higher and

next lower multiples of 50, plus 625.

A second method is to consider the number to be made up of a number of hundreds plus a number less than 100.

Rule: Square the hundreds figure, subtract 1 from the result, and multiply by 10,000. Then add 1 to the hundreds figure and multiply by 200; multiply by this product the tens and units part of the given number. Next square what the given number lacks of the next hundred. Add these results together, and the sum will be the required square.

Examples:—

$$\begin{aligned} 487 &= 400 + 87 \\ (4^2 - 1) \times 10000 &= 150000 \\ 2(4 + 1) \times 100 \times 87 &= 87000 \\ (100 - 87)^2 &= 169 \\ (487)^2 &= 237169 \\ 293 &= 200 + 93 \\ (2^2 - 1) \times 10000 &= 30000 \\ 2(2 + 1) \times 100 \times 93 &= 55800 \\ (100 - 93)^2 &= 49 \\ (293)^2 &= 85849 \end{aligned}$$

When the number lies between 100 and 200 the first product disappears, and the rule becomes:—

To the square of the difference between the number and 200 add 400 times the difference between the number and 100.

$$\begin{aligned} 192 &= 100 + 92 \\ (200 - 192)^2 &= 64 \\ 400 \times 92 &= 36800 \\ (192)^2 &= 36864 \end{aligned}$$

An algebraic statement of this rule is thus:—

$$(100y + x)^2 = 10000(y^2 - 1) + 200(y - 1)x + (100 - x)^2$$

The first of these rules is especially useful in squaring numbers between 25 and 75, but is very easy of application to larger numbers.

The second rule is most useful in squaring numbers lying in the last quarter of the hundred.

To be able to use these rules readily, the squares of the numbers from 1 to 25 should be committed to memory.

E. G. T., '87.

Oh!

I sing the praise of angels here below,—
Of those whose charms perpetually brighten
The labor we (in theory) delight in,—
The co-ed's row!

Full many respites from my toil I owe
To those dear maidens, and our pleasant chat
On stairs, in lecture-room, but mostly at
The co-ed's row.

Thither at frequent intervals I go,
And with the rare effulgence of my smile,
From all their cares and labors soon beguile
That co-ed's row.

With scoffs and gibes the other fellows show
Their bitter envy. These I scorn reply to,
Knowing for sympathy I need but hie to
The co-ed's row.

In the organic lab. the smells I know
Are something weird and wonderful, but this
I could endure, did I not sadly miss
That co-ed's row.

Down in the miner's den the fires glow
With heat infernal. Even there doth come,
Through grime and gloom, one heavenly vision from
The co-ed's row.

If, by some happy chance, to heaven I go,

[We regret exceedingly that lack of space prevents our publishing the remaining forty-seven stanzas of this strikingly beautiful and realistic poem. A limited number of papyrograph copies can be obtained at desk No. 77, Analytical Laboratory. Sold by subscription only].

W. *. L.

The Athletic Games.

ON Saturday afternoon, Feb. 27th, the gymnasium was filled with a crowd of three or four hundred people, it being the occasion of the indoor winter meeting of the Athletic Club. The events were open, and were characterized by the large number of entries. Most of them were well contested, though no records were broken. The first event in order was the *Parallel Bars*, which was won by N. P. A. Carter, '87.

Running High Jump. Four contestants put into appearance. Won by R. Devens, '88; 5 ft. $\frac{3}{4}$ in. R. S. Hale, B. Y. M. C. U., second, at 5 ft.

Running High Kick. Won by Wm. S. Phillips, B. Y. M. C. U., 8 ft. 11 in. T. H. Shepard, Harvard, 8 ft. 6 in.

Fence Vault. This event was well contested. Won by W. L. Dearborn, '88, 6 ft. 7 in. J. H. Mirrlees, '87, second, 6 ft. 6 in. C. O. Lander, Harvard, third. Dearborn's excellent vaulting was much applauded.

Putting the Shot. D. B. Chamberlain, Harvard, J. Cunningham and J. D. Ryan, both B. Y. M. C. A., appeared. Ryan won with a put of 38 ft. 3 in. Cunningham, 38 ft.

Pole Vault. This event was quite exciting. J. H. Mirrlees, '87, H. F. Hill, '87, and P. R. Frothingham, Harvard, were the entries. Won by Hill, 9 ft; Mirrlees, second, 8 ft. 11 in.

Standing High Jump. Won by F. G. Curtis, B. Y. M. C. A., at 4 ft. 7 in., R. Devens, '88, 4 ft. 6 in.

Tug-of-War. The interest of the day was centered in this event. The entries were Harvard, '88, which was, with the exception of the anchor, the same team that won the championship at Harvard last year; M. I. T., '89, A. Amory (anchor), G. D. Marcy, F. C. Pierce, and C. Cheney; M. I. T., A. G. Robbins (anchor), C. B. Vorce, F. E. Foss, and E. S. Jones. The M. I. T. drew the bye, and Harvard '88, and M. I. T. '89 contested the first heat. The Freshmen won about two inches at the drop, gained two more, lost one of them, and held the rest until time was called. The Institute team then withdrew, and the event was awarded to the Freshmen.

The remainder of the afternoon was occupied by the sparring. In the first bout of the feather-weight, A. P. Gaines, '88, defeated G. O. Draper, '87. The second bout was between Grew, of Harvard, and Williams, B. Y. M. C. U., and was won by the latter. The next bout was between Gaines and Larkin, B. Y. M. C. U. Gaines won, but the judges, reversing their decision, ordered another bout, which Gaines' trainer declined to allow him, and it was awarded to Larkin. The latter withdrew, and the event was awarded to Williams.

The light-weight sparring was won by G. U. Ashe, H. A. A., and this was the only event won by Harvard during the day.

The middle-weight sparring was won by J. P. Roche, B. Y. M. C. A.

Five events were won by M. I. T., one by Harvard, and five by outsiders.

The officers of the meeting were Chas. Wood, '86, clerk of course; Dr. J. K. Simpson, referee; W. A. Davis, U. A. A. C., and C. H. Atkinson, '87, Harvard, '85, Judges; J. Boyle O'Reilly, referee of sparring; Dr. Wm. Appleton and Frank F. Dole, judges of sparring; stewards, A. G. Robbins, '86; Quintard Peters, '87; G. C. Dempsey, '88; and Chas. Cheney, '89.

Noticeable Articles.

THE *Westminster Review* for January has a paper on Renan's "Influence of the Roman Empire on the Catholic Church," the "Hibbert Lectures for 1880," a little book which should be read by all students of the Middle Ages; as Dean Stanley says: "No saying of ecclesiastical history is more pregnant than that in which Hobbes declares that 'The Pope is the ghost of the deceased Roman Empire, sitting crowned upon the grave thereof.' This is the true, original basis of his dignity and power, and it appears even in the minutest details." These lectures of Renan's are described by the great Unitarian Divine, Dr. Martineau, as "a series of historical sketches, at once constituted into a whole by a tissue of philosophical conceptions, and separately rich in picturesque coloring and dramatic situations, and presented with that marvelous charm of literary form in the command of which the French are the first among European nations, and, may I not add, M. Renan among the French." They have been "overturned" into bad English in this country. I believe there is a translation belonging to the Hibbert series which is better, but let all who can, read them in the original.

There is a highly appreciative paper on our American humorist, Bret Harte. Of his irresistibly funny, "Condensed Novels" the writer says: "We can imagine that some of them were produced by taking actual works of certain distinguished authors, adding nothing thereto, but putting them to boil or stew, or to some other condition favorable to evaporation, and getting rid of all that was ordinary or common to other authors, until nothing was left behind except eccentricities of style or thought in a highly

compressed, condensed, unadulterated form;" and he quotes Bret Harte's capital parodies of Victor Hugo and of that vicious charlatan, Bulwer-Lytton. There is a paper on "Mr. Gladstone and Genesis." As if he had not his hands full with his Irish difficulties, Mr. Gladstone has managed to bring a theological storm about his ears. And there is a review of Leslie Stephen's life, of a member of Mr. Gladstone's last cabinet, Henry Fawcett, the economist, — that remarkable man who managed to do without eyes a great deal more than most men do with them. The short notices of contemporary literature fill ninety pages, and in the *Westminster* they are always admirable.

Harpers' for March opens with a fully illustrated paper that will be interesting to engineers. It is an account by the well-known writer, Moncure Conway, of the great Krupp works at Essen. The mere statistics of this great establishment are astonishing. The works within the town cover more than 500 acres, half of which are under cover. According to a census taken in September, 1881, the number of hands employed by Mr. Krupp was 19,605, the members of their families, 45,776, making 65,381 persons supported by his works. Of the laborers, 11,211 were engaged upon the work in Essen, the rest being employed in the surrounding mines, the branch works at Neuwied and Sayn, and the mines in Spain (Bilbao), from which, though less extensive, the finest ores are brought. Mr. Krupp owns 547 mines in Germany. He owns four sea-steamers, and there are connected with his Essen works, 42 miles of railway, employing 28 locomotives and 883 cars, 69 horses with 191 wagons, and forty miles of telegraph wires, with 35 stations and 55 Morse apparatuses. The establishment possesses a grand chemical laboratory, a photographic and lithographic atelier, a printing-office, with 3 steam and 6 hand presses, and a book-binding room. The establishment even runs a hotel, an excellent one, as I have good reason to know, in Essen; and three years ago, for the advantage of the population he has gathered, Mr. Krupp opened a large central supply-store, connecting with it many branches, extending its benefits to all parts of the town and to the colonies he has built for his workmen in the neighborhood. There are 82 steam-hammers. The largest is "Fritz," whose 50 tons fall on an anvil and anvil-block weighing together 1250 tons, these resting on a foundation 100 feet deep. There are 1553 big ovens, 439 steam-

boilers, 450 steam-engines (representing together 18,500 horse-power), 1622 machine-tools, 21 rolling-trams, involving a consumption of 3100 tons of coal and coke by the 1648 furnaces, whose draught is through chimneys of which one is 280 feet high, with a diameter of 30 feet at the bottom."

Mr. Conway was admitted by very special privilege for the purpose of writing this article. The works are rigidly closed to the public. "I once visited," he says, "the Cyxarthxa Iron-works in South Wales, in company with Emerson, who, after gazing upon the lurid scene, said, 'Surely, Milton must have drawn his pandemonium from some such place.' In these vast and weird halls at Essen, all the Infernos ever imagined by man, save Shakespeare's 'thrilling region of thick-ribbed ice,' seem collected and seething together.

It is a rather sad commentary on the boasted Christianity and civilization of the nineteenth century, that these great works are chiefly known the world over for the production of killing apparatus of greater power than ever was invented before. Perhaps, however, this is one step in the *reductio ad absurdum* of war.

There is a full-page portrait of Krupp; and, as might be expected of the portrait of this king of labor, the builder up of the "largest business in the world dependent on an individual," it is a very powerful face.

Harper's has also a charming illustrated paper on one of the most beautiful cities in America, Cleveland.

The *Cornhill* for February has a paper on "Whist, Rational and Artificial," which will interest all players of that noble game. It is a protest against the refinements and corruptions in the way of "signaling" and the like which have of late been introduced into it—a protest with which the present writer, who is something of an old fogey, feels a good deal of sympathy. The writer passes recent books in review, and apropos of the "Whist Development" of "Cavendish," he is tempted to exclaim, "It were better for whist if 'Cavendish' had never been born." The modern developments of the game, he declares, "tend with accumulating force to spoil it;" and old-fashioned folks will be inclined to agree with him.

W. P. A.

Inattentive youth: "What is the French for to-morrow?"

Hard student: "Demain, of course."

List of Publications, M. I. T.

BARROWS, WALKER B. ('76). Plants in City Water. *Rep. Bd. Water Commissioners, Middletown, Conn.*, for the year 1885, pp. 10, 11.

CROSBY, W. O. ('76). Colors of Soils. *Proc. Bost. Soc. Nat. Hist.*, XXIII., 219-222. (Jan. 17, 1885.)

EDMANDS, J. RAYNER ('69).—A Monument to De Saussure. Note. *Science*, VII. (1886), 119.

HOLMAN, MARIE G. ('81). Cleaning and Polishing Compounds. *Christian Union*, Ap. 16, 1885.

———(Published since the death of Mrs. Holman.) Food, and the Effect of Cooking. *Christian Union*, XXXIII. (1886), No. 3, p. 12; The Action of Yeast and Baking Powders. *Id.*, No. 4, p. 12; Domestic Poisons. *Id.*, No. 5, p. 12.

LYLE, CAPT. D. A., U. S. A. ('84). Construction Report of the Cast-iron Body for the 10-inch wire-wrapped B. L. Rifle. *Report Chief of Ordnance*, 1885. Appendix 23, p. 159.

———Construction Report of the 12-inch Cast-iron Breech-loading Rifle fabricated by the South Boston Iron Works, during the years 1883-1885. *Id.*, Appendix 24, (165.)

———Report on Experimental Cylinder from the 12-in. Cast-iron Breech-loading Rifle hooped and tubed with steel. *Id.*, App. 28, (271.)

———Annual Report of Inspector of Ordnance at South Boston Iron Works. *Id.*, App. 32, (331.)

———Report on the manufacture of 8-inch chilled projectiles. *Id.*, App. 38, (403.)

———(With Lieut. H. D. Borup, U. S. A.) Construction Report of the 12-inch Cast-iron Rifled Mortar, hooped with steel. *Id.*, App. 25, (175.)

———(With same.) Experimental Cylinder from the 12-inch Cast-iron Rifled Mortar hooped with steel. *Id.*, App. 26, (209.)

———(With others, as members of a "Board for Testing Rifled Cannon.") 1—Progress Report on the 8-inch Yates Breech-loading Rifle. *Id.*, App. 48, (483.) 2—Trial of the 32-inch Breech-loading Steel Rifle. *Id.*, App. 49, (492.)

MINOT, CHAS. SEDGWICK ('72.) Text-Books on Methods in Microscopic Anatomy. Note. *Science*, VII. (1886), 100.

NICHOLS, W. R. ('69.) Report on Manufacturing Refuse. *Rep. Mass. Drainage Commission*, 1886, 231-236.

TECHNICAL.

At a recent meeting of the Society of Arts, Mr. A. H. Cowles, of Cleveland, O., read a paper on the production of aluminum and its alloys, in which he claimed that pure aluminum can be produced by a new process at a cost of about forty cents per pound. The metal is reduced from its oxide, corundum, by the agency of carbon and heat, the latter being furnished by the electric arc between two immense carbons, which are connected with a powerful dynamo. Other metals, such as calcium, magnesium, potassium, sodium, and silicon, can be produced in the same way.

Instead of the usual small, high-speed engines, electric light companies are coming to use large, low-speed engines, on account of the greater economy of the latter. The economy is still further increased by employing compound condensing engines, where an abundant supply of water can be had.

A correspondent of the *Boston Journal of Commerce* describes a method of lighting the gas of a shop by electricity derived from the friction of a belt. A wire runs from the belt around the room, passing near each gas-jet, and being suitably insulated. Two metal hooks fixed in wooden handles and connected by a flexible wire are provided, and when light is wanted, it is only necessary to hang one of the hooks on the wire conductor and hold the other near the burner, when a spark will ignite the jet.

The British experiments to test the relative merits of oil, gas, and electricity for lighthouse illumination, have resulted in demonstrating the superiority of electricity over all other lights, even, as has been generally doubted, in dense fogs.

In England, a pulley sixty-three feet in diameter and weighing eighty-three tons has just been made. It has grooves for thirty-two ropes, which together will transmit 1,280 horse-power.

The Tidewater Oil Company people have secured the right of way for an oil-pipe from the

wells in Pennsylvania, through New Jersey to Constable Hook, adjoining the great Standard Works. The distance is a trifle over three hundred miles. The pipes, six inches in diameter, are to be laid three feet below the surface. Through the State of Pennsylvania four large pumps are stationed to force the oil. The capacity of the pipes is 10,000 barrels daily. The cost of laying will be about \$6,000 per mile. About one mile can be laid a day. One hundred and seventy miles of pipe is already laid in Pennsylvania. The work of laying the pipes in New Jersey will be begun in May. The cost of this enterprise will be \$2,000,000.—*American Engineer*.

The city of Buffalo has, within its limits and in its immediate vicinity, 436 miles of railroad track, and this will shortly be increased to 612 miles, making unquestionably the largest railroad yard in the world.

It is reported that Prof. Dubois estimates the maximum temperature of the air in which a man can breathe for any length of time to be 122°, and this can be endured only when the air is very dry. It may be interesting to know that during some of the boiler tests at the Institute last term, the temperature rose to 125° in parts of the boiler-room, where some of the observers were obliged to stay all day.

Experiments have recently been tried using electricity to furnish the headlight of a locomotive. The light was so brilliant and dazzling that the engineer was unable to see surrounding objects, and it had to be abandoned. The expense was also an important item. Some railroad-men are advocating the abolition of all locomotive headlights, claiming that they are a source of danger, preventing the engineer from distinguishing the pale signal-lights.

PHYSICAL "TIPS."

Specific heat—Hot as Hades.

The Dyne—Unit of digestion.

Resistance to pressure—Warding off a caress.

The alcoholic barometer—One used to determine a wet night.—*Lampoon*.

Technics.

It is singular that the oftener a man is *set up* the *tipsier* he gets.

A third-year chemist was telling, the other day, how many *horse-power* his new microscope had.

Lecturer in Industrial Chemistry: "Champagne, gentlemen, contains, *as you know*, a much larger proportion of CO_2 than other wines."

A student has been overheard asking Prof. Cross if chemical action could take place in a vacuum.

Can a pasteboard model of a crystal be defined as a hollow-hedral form?

"What does a belle for ornament display
Which makes a Dutchman's breakfast every day?"
* * * * *

"Your question asks, What decks a belle
And feeds a Dutchman? Who can tell,
Unless, for want of daintier things,
Mynheer should breakfast on her-rings."

"Come off!" as the freshman said at the german when his fair partner mounted his pet corn.

Miss Pecksleigh, reading letter: "'I regret extremely that, owing to a previous engagement, I shall be unable to accept your very kind invitation to make one at your theater party.' Why, George's chum called only yesterday, and said George told him he hadn't a single engagement for this week!"

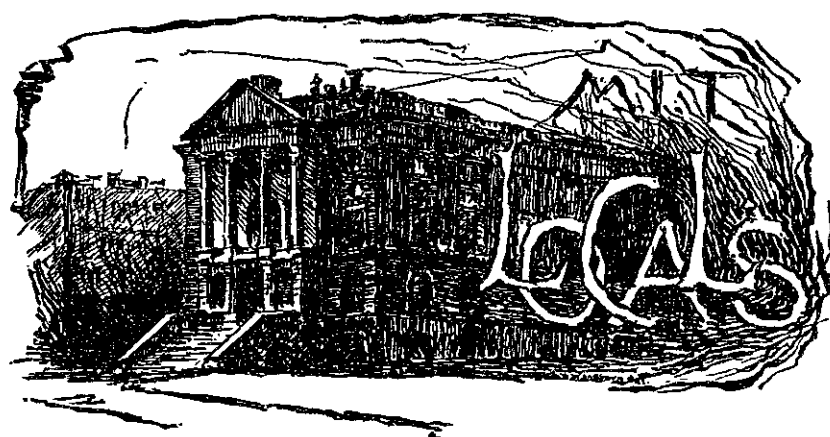
Sagacious brother: "Cert. The previous engagement, he means, is the racket that busted him last, and now he hasn't the rocks to go."

AULD LANG SYNE.

When a Sophy meets a Proffy,
Raising hat so fly,
How that Soph. devoutly hopes the
Prof. will mark him high.

Every Prof. is somewhat human,
And to pass one by
With impressive salutation
Is good pol-i-cy.

Prof. Maria Mitchell asks why women should not be civil engineers and surveyors. Most any of our civils who have had a summer's experience could tell her.



The Senior Ball will be on the 30th of April.

The class in ventilation visited the hospital in Cambridge, February 24th.

It is safe to say that the Berkeley Hall German, February 20th, was a financial success.

Theta Xi held a convention at New Haven, February 19th, at which the Delta chapter was well represented.

Mr. F. P. Gulliver, '87, has been compelled, by illness, to withdraw from the Institute for the remainder of this year.

S. Wallace Bowles, '87, a prominent member of the Canoe Club, is not expected to return to the Institute this year.

The pin of the Society of '88 may be had of any of the members of the executive or entertainment committee.

President Walker has been delivering a course of lectures on "Socialism" before the Senior class at Yale.

The next number of THE TECH will contain an article upon the U. S. Mint at Philadelphia, by Professor Drown.

An '87 theater party witnessed "Oxygen" last Monday evening, being attracted, of course solely, by the scientific character of the play.

It is still a question among students in third-year Pol. Econ. what that second sheet of paper is for.

Prof. Richards, who was recently elected President of the American Institute of Mining Engineers, is the first college professor to be so honored.

We hope that no members of the class of '87 will stay out of the class dinner, because the

\$2.50 has been raised to \$3. Flush or not, a full house is desired.

Mr. Horn, who was recently elected an editor of '88's *Technique*, has been forced, by pressure of circumstances, to resign his position. His loss will be severely felt.

W. B. Douglas, formerly of '87, was in town for a day or so during the last week, and improved the opportunity by taking in the Athletic Club games and the White Bear.

Professor Clark recently took the first year special architects to Newtonville, to examine the plumbing arrangements at his home. The class was charmingly entertained by Mrs. Clark.

At the regular meeting of the K₂S, which was held at Young's last Friday evening, Messrs. Clark and Bruce were initiated. Technical papers were read by Messrs. Crosby, Russell, Lloyd, and Gleason.

It has been suggested that in case of another German, that there be roller-skating before the dancing, so that those present may have an opportunity to become acquainted with themselves and the floor.

Members of the Society of '89 met week before last in Room 15. Some time was spent in discussing proposed changes and abbreviations of the constitution, but owing to lack of a quorum no action was taken.

Class in French. Student reads:—"Avez-vous lu le siège de Jérusalem, dans Josèphe?"

Professor: "What book is that Josèphe?"

Student: "One of the books of the Bible, I suppose, sir." (Ah, Pete! what would the old folks at home say!)

The party given on the 20th inst. was as great a success as it is possible for a crowded german to be. Berkeley Hall floor was not so excessively slippery as usual, Edmand's music was unexceptionable, and the unremitting efforts of Messrs. Locke, Spaulding, Ferguson, and Fiske made the affair highly enjoyable.

The first formal meeting of the Chess Club was held last Saturday. After amendment and

adoption of the Constitution and By-laws, the following officers were elected: President, Jas. T. Greeley; Vice-President, S. Wrightington; Secretary, C. G. Merrill; Treasurer, C. B. Kendall; Recorder, A. W. Jones.

The Glee Club has secured the services of Mr. Shaw as leader, and expect to give a concert by the second week in March. For two reasons this first concert ought to be attended by a large number of the students: the singing will be well worth hearing, and the students at large should show their appreciation of the efforts of the members of the Club.

The students in third-year Industrial Chemistry, under the guidance of Prof. Norton and assistant Underwood, visited the Merrimac Chemical Works at South Wilmington, Mass., on the 19th inst. These works are quite extensive, comprising a large number of wooden buildings, and covering several acres of ground, and the students were made practically acquainted with the manufacture of sulphuric, chlorhydric and nitric acids, Glauber's salts, tin chloride, alum, and other common products. The solitary co-ed in the party excited much admiration by her climbing abilities and endurance of the *perfumery*, which affected the visitors in a manner highly amusing to the hardened operatives.

Eleven students met in Rogers, last Tuesday, to take measures for forming a chess club. Mr. J. T. Greeley, who was elected temporary chairman, stated that a number of gentlemen had previously notified him that they should, unfortunately, be unable to attend the meeting, but desired to join the club. Mr. Wrightington was elected secretary pro tem., and a committee of three appointed to draw up a constitution, and report at the first regular meeting of the club, to be held as early as possible, when permanent officers will be elected, and all necessary arrangements made. Considerable discussion took place as to the best methods of conducting the club, and it was voted to hold a full meeting not oftener than once in two weeks, Thursday evening being given the preference.

THE COLLEGE WORLD.

HARVARD.—The Harvard Senior crew averages 164 pounds.—Capt. Storrow has forbidden the candidates for the Harvard crew to try for the tug-of-war.—A series of lectures on scientific subjects is being projected by the authorities of the scientific school.—The first physical seminar ever held at Harvard took place last week, in the Jefferson Physical Laboratory.—The conference committee have recommended to the Faculty that Article 26 of the Rules and Regulations of the college be stricken out. This provides that a student shall be suspended for cheating. In its place they have recommended a still more severe penalty—that of unconditional expulsion.—D. B. Chamberlain recently broke the intercollegiate record in putting the shot, in practice.

YALE.—Nineteen men are taking the course in Electrical Engineering in Sheffield.—The Senior class in Sheffield is divided into courses as follows: Civils, 18; Dynamics, 17; Selects, 19; Chemics, 6; Biologists, 3; Agriculturists, 2.—Friends of the Johns Hopkins University are afraid that President Gilman will accept the Presidency of Yale College. (*Haverfordian*).—Brooks, the famous sprinter, will not enter the intercollegiate games this year.—The crew has practically been selected.

COLUMBIA.—Sixteen men are training for the Freshman crew. Their average weight is 150 pounds.—The average weight of the 'Varsity is 165 pounds.

IN GENERAL.—The Cambridge University (Eng.) oarsmen are first in practice this year, as usual, in preparation for the annual boat-race on the Thames River with Oxford. The race will probably be rowed on April 5th this year. (*News*).—There are five graduates of Williams College on the staff of the *Springfield Republican*.—The plans for the new Dartmouth gymnasium have been drawn. The dimensions are to be 100 x 50 feet, with a wing for special apparatus. There will be a second story, containing a theater, seating 500. (*Yale News*).—



EVE'S DAUGHTER.

I waited in the little sunny room;
The cool breeze waved the window-lace at play;
The white rose on the porch was all in bloom,
And out upon the bay
I watched the wheeling sea-birds go and come.

"Such an old friend,—she would not make me stay
While she bound up her hair." I turned, and lo,
Danaë in her shower! and fit to slay
All a man's hoarded prudence at a blow:
Gold hair, that streamed away
As round some nymph a sunlit fountain's flow.

"She would not make me wait!"—but well I know
She took a good half hour to loose and lay
Those locks in dazzling disarrangement so!

—Atlantic.

He: "Speaking of their marriage, I think they both made a very good match."

She: "How can you say so? Why, she's brimstone personified, and he's a perfect stick."

He: "Brimstone and a perfect stick—precisely the essentials to a good match."—Ex.

SNOBBISHNESS.

A young lady from Tennessee, a cousin of the late President Polk, visited friends not many miles from St. Paul, last summer, according to the *St. Paul Pioneer-Press*. Her relationship with the deceased President was generally commented upon during her stay. Her visit ended, and, as is customary, she made her parting calls. Among others she called at the house of a young lady who had failed to fall in love with the young lady from Tennessee, and, finding the ladies of the house out, left her card, which contained the letters "P. P. C." The envious young lady, on returning home, picked up her card, and, scanning it, said: "She does try to put on lots of airs, simply because she is related to a President! Just think of it, P. P. C.—President Polk's Cousin!"



A COMMON EXPERIENCE.

When the compositor wants pie he goes to the devil for it.—*Puck*.

Down in the pasture, cool, that sweet June day,
I lay, beneath the thorn-tree, half asleep,—
Beside the brook that winds its lazy way
Through shady glades and sunny meadow sweep.

Down through the orchard, then, I saw her pass
Bending beneath the rosy, bee-sought boughs;
Across the meadow ankle-deep in grass;
A-down the narrow path worn by the cows,—

Till in the brook she stood. The blushing tree
Shook down its petals o'er her shapely head;
The wanton waters kissed her snowy knee;
Her soft, brown eyes met mine,—she turned and fled.

'Twas long ago, yet even now I laugh
When I remember how I scared that calf!
—*Chronicle*.

We have heard of lazy men, but we think the laziest one is a Union Club bachelor, who bought a dozen shirts, marked the first one with his full name, and then, to save time and trouble, put simply "ditto" upon the rest. He is now wondering how it happened that eleven shirts, so plainly marked, were lost in the wash.—*Rambler*.

The stamp act—applause at the theater.—*Ex*.

A growing evil—Your next-door neighbor's baby.—*Ex*.

Miss Polka Dot (who dotes on music): "And what do you think of Meyerbeer?" *Mr. X., (who is Philistine)*: "Well, really, it's all very nice, but I really don't think it quite comes up to Milwaukee; do you?" *Mr. X.* does not expect any Christmas card.—*Ex*.

AN ENTERPRISING PUBLISHER.

Publisher (at seance): "I understand that you possess the power to communicate with spirits of another world?"

Medium: "Yes, sir."

Publisher: "Can talk with anyone, I suppose?"

Medium: "Oh, yes, sir; anyone and everyone."

Publisher: "Well, I wish you would ask Hugh Conway if his engagements will permit him to furnish me with a serial story at once, and what his best terms are for the same."—*Life*.

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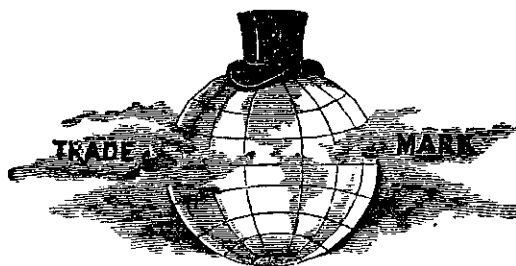
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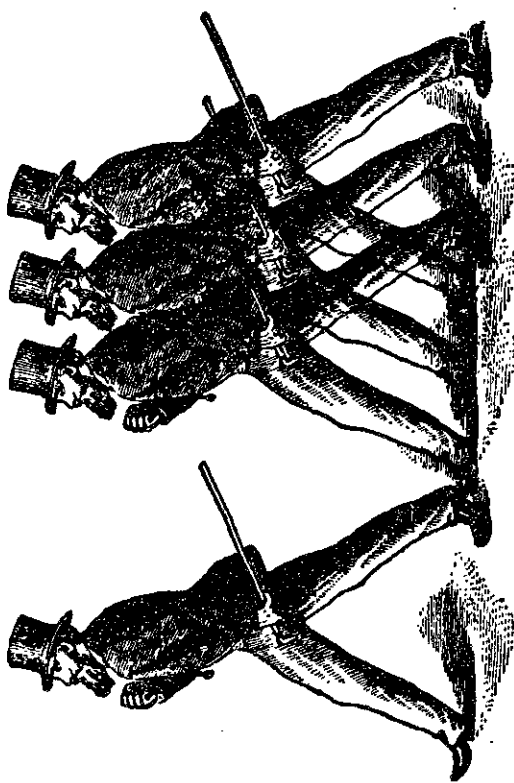
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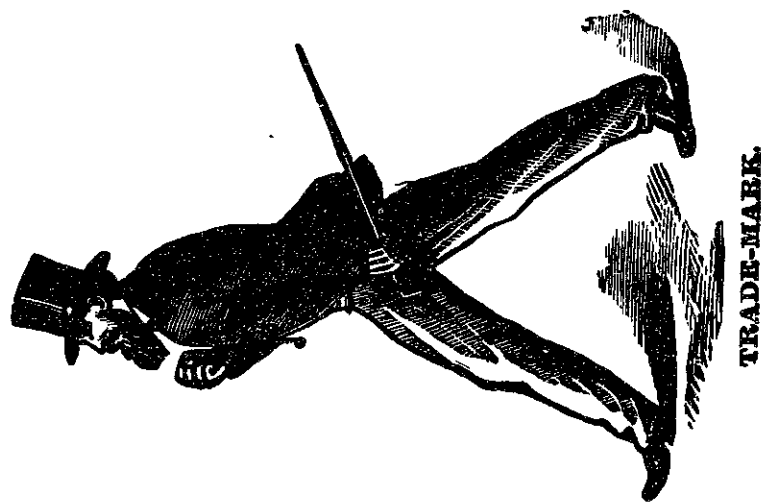
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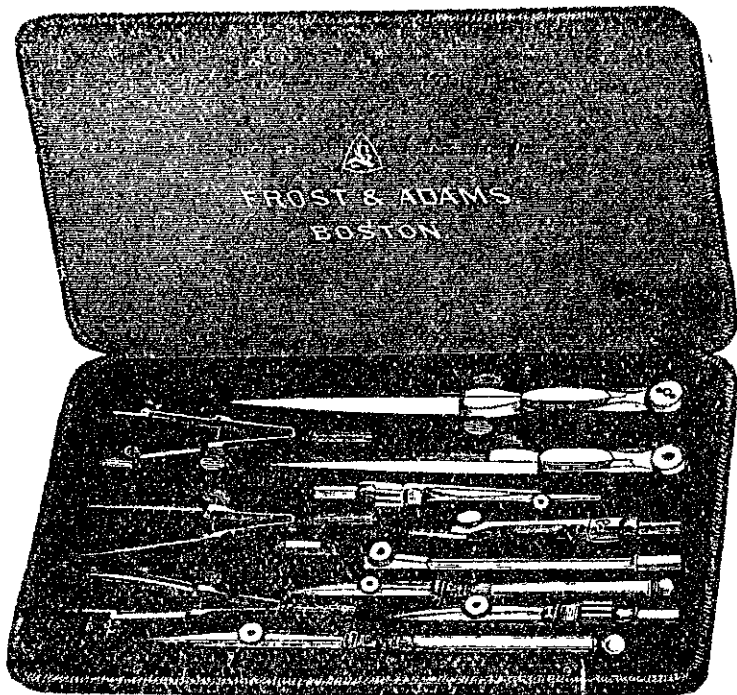
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